ROYAL UNIVERSITY OF PHNOM PENH (RUPP)
SWEDEN-RUPP BILATERAL PROGRAM
SIDA CONTRIBUTION: No. 11599

REQUEST FOR EXPRESSIONS OF INTEREST
FOR A FIRM TO PROVIDE TRAINING SERVICES
ON TEACHNICAL TRANINING FOR CAMPUS
NETWORKING & DATA CENTER
(SELECTION METHOD: QUALITY BASED
SELECTION (QBS))

The Royal University of Phnom Penh has received a Grant from the Sweden toward the cost of SWEDEN-RUPP-Bilateral Program, Royal University of Phnom Penh and it intends to apply part of the proceeds for Consulting Services.

The detailed Terms of Reference (TOR) for the assignment can be found at the following website www.rupp.edu.kh/offices/procurement or can be obtained by email or in hard copy: from the address below.

The consulting services ("The Services') includes conduct the need assessment and planning, course development and delivery, mentorship and coaching, and propose the capacity development plan for the RUPP's IT. The services shall provide the high quality capacity building program to the IT Center technical staffs in three key areas inclucing (1)management, control, and maintenance of the campus network, including VLANs, WLAN, inter-VLAN, OSPF, BGP EVPN, and VXLAN routing, especially mitigation of network attacks; (2) Management, control, and maintenance of on-prime servers and storage in the data center. Backup and restore, as well as data encryption and protection; and (3)Management, control, and maintenance of data center facilities, including the UPS, cooling, sensor, and fire suppression systems.

The RUPP now invites eligible consulting firms ('Consultants') to indicate their interest in providing the services.

Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The short listing will be based on information demonstrating that the Consulting Firm have the required qualifications and experience to perform the services.

The short-listing criteria for the training services are:
1. Technical Proposal
2. At least 3 years' experiences in conducting training on campus networking and data center management.
3. Proof a good record of past performance on training services or any similar activities
4. Experience in conducing capacity building & training program at least 5 organizations.
5. Prove working experience of Huawei network and data center products and solutions
6. Proof expertise in conducting capacity-building and training with expertise in the area of campus network, server & storage and data center facility management.

Consultants may associate with other firms to enhance their qualifications. A Consultant will be selected in accordance with the Quality Based Selection (QBS) method. Consultant must submit the technical proposal (outlining the approach and methodology to be used for this assignment) and financial proposal (financial proposal detailing the costs associated with the assignment) in a separated envelop.

Full Terms of Reference and further information in written form can be obtained from www.rupp.edu.kh/offices/procurement or the address or e-mail below.

Expressions of interest must be submitted to the address below by email or hard copy during office hours from **8:00 to 12:00** and from **13:30 to 17:30 hours,** Monday through Friday, except public holidays., no later than **01st November, 2024 before 17:30 hours: (Cambodia local time)**

Attention : **Mr. Kheam Hong,** Project Procurement Officer, SWEDEN-RUPP
Address   : Royal University of Phnom Penh, Room 603, STEM Building,
                 Russian Federation Blvd, Sangkat Toek Laark 1, Khan Tuol
                 Kork, Phnom Penh, Cambodia.
Phone   : (+855) 78 755 579
Email   : kheam.hong@rupp.edu.kh, www.rupp.edu.kh/offices/procurement

ROYAL UNIVERSITY OF PHNOM PENH (RUPP)
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TERMS OF REFERENCE
FOR
A FIRM TO PROVIDE TRAINGING SERVICES OF TEACHNICAL
TRANINING FOR CAMPUS NETWORKING & DATA CENTER

I. BACKGROUND

Royal University of Phnom Penh (RUPP) was established in 1960 and is Cambodia's oldest and one of the largest public universities. RUPP hosts more than 16721 students and over 977 full time staff. The university falls under the mandate of the Ministry of Education Youth and Sport (MoEYS). RUPP has 5 faculties namely: 1. Faculty of Social Science and humanities, 2. Faculty of Science, 3. Faculty of Engineering, 4. Faculty of Development Studies and 5. Faculty of Education), one Institute of foreign languages and 9 service minded centers.

RUPP is constrained by insufficient resources, unaffordable, unreliable and inadequate connectivity, a high student-teacher ratio, the lack of ICT infrastructure and equipment. In this context, it is difficult to provide teachers and/or students with support for teaching, learning, research projects and extracurricular activities. The 2014-2018 strategic plan of RUPP has three goals relevant to ICT. Two of the goals focus on ICT—increasing STEM enrolments and being a center of excellence for ICT. A third goal of "becoming a leading institution in providing research, consultancy and community services". Moreover, within the University's ICT policy and Master Plan, expanding and enriching-services is one of the 4 components.

RUPP has three main goals in realizing the focus of improving the University's business processes through the application of ICT. This over-arching goal is further sub-divided into three sub-goals namely:
1. Upgrade and expand the IT infrastructure
2. Automate RUPP workflow processes through the deployment of Management information systems (MIS)
3. Build the capacity, firstly of the IT staff to manage and coordinate the IT services, and secondly build the capacity of RUPP staff and students in using the MIS.

Basing on the ICT Policy and Master Plan that were developed with support from Sida and in collaboration with key stakeholders RUPP is submitting this application to Sida to commence the operationalization of the master plan and policy by focusing on the first sub-goal i.e. to upgrade and expand RUPP's IT infrastructure. The ICT policy and master plan emphasize the importance of facilitating: connectivity and common network services; teaching; learning; research; and university management, administration, governance, management, control, and maintenance of ICT resources. To realize these projections, it is imperative to have a functional IT infrastructure.

To successfully achieve this sub-goal, RUPP plans to collaborate with the Swedish partner, Swedish Program for ICT in Developing Regions (SPIDER) located at the Institution of Computer and Systems Science (DSV) at Stockholm University (SU) as its technical partner. SPIDER has worked with research and capacity development in Bolivia and Tanzania and has experience with institutional capacity building in IT.

II.   PROJECT DEVELOPMENT OBJECTIVES

This programme application to build the ICT Data Backbone/IT infrastructure for RUPP to enable all stakeholders access and exchange knowledge, services and information.

III. PROJECT COMPONENTS

There are three main components as follows:
1. Component 1: Improving/expanding access through ICT infrastructure and Data Center Establishment
2. Component 2: Software Systems Development
3. Component 3: Capacity Budiling

IV. OBJECTIVE OF THE ASSIGNMENT

The RUPP is seeking consultancy services to enhance the capacity of its IT Center officers to manage, control, and maintain the campus network and data center infrastructure. Details of the consultancy services by stage are described below. The selected Firm should ensure the compliance with the Cambodian Laws and regulations.

➢ The specific objectives include:
  a. Enhancing knowledge and skills in campus networking solutions.
  b. Building expertise in the design, implementation, and management of data center.
  c. Ensuring sustainability through training and knowledge transfer.

➢ This will be achieved through the development and implementation of a comprehensive training program:
  a. Management, control, and maintenance of the campus network, including VLANs, WLAN, inter-VLAN, OSPF, BGP EVPN, and VXLAN routing, especially mitigation of network attacks.

  b. Management, control, and maintenance of on-prime servers and storage in the data center. Backup and restore, as well as data encryption and protection.

  c. Management, control, and maintenance of data center facilities, including the UPS, cooling, sensor, and fire suppression systems.

V. SPECIFIC TASKS AND RESPONSIBILITIES OF THE TRAINING SERVICES

The Interested firms or consultants will be responsible for the following tasks:
1. **Assessment and Planning:**
   - Conduct a needs assessment to determine the current capacity and gaps in campus networking and data center management.
   - Develop a comprehensive training plan and curriculum tailored to the needs identified and in close discussion with the ICT team.
   - The curriculum should cover the following areas:
     o Campus networking (wired and wireless)
     o Data center management (facility management, virtualization, storage)
     o Network and server security
     o Troubleshooting and problem-solving techniques
   - Develop training materials, including manuals, presentations, and practical exercises.

2. **Training and Capacity Building:** (RUPP will provide the venue for the training, except other direct costs must be included in the financial proposal):
   - Deliver the training program to RUPP's IT Center staff.
   - Employ effective training methodologies, including lectures, hands-on exercises, and simulations.
   - Assess participants' learning progress through practical assessments and evaluations

3. **Mentorship and Coaching:**
   - Provide mentorship and coaching to IT Center staff to support knowledge transfer and skill development.
   - Conduct on-the-job training and support to address specific challenges.

4. **Capacity Building Plan:**
   - Develop a capacity-building plan outlining the long-term strategies for sustaining the acquired skills and knowledge.
   - Include recommendations for continuous learning and development.

VI. Minimum Qualifications and Experience Required for the Training Services

1. Technical Proposal
2. At least 3 years' experiences in conducting training on campus networking and data center management.
3. Proof a good record of past performance on training services or any similar activities
4. Experience in conducing capacity building & training program at least 5 organizations.
5. Prove working experience of Huawei network and data center products and solutions
6. Proof expertise in conducting capacity-building and training with expertise in the area of campus network, server & storage and data center facility management.
(please notice that the consulting firm can propose more resources to fulfil the scope of work mentioned in this ToR):

Title	Experiences	Areas of Specialization, Qualification	Skills and Knowledge, but not limited to
1 Team leader/Trainer Coordinator	At east 3 years in Campus network and Data Center Installation and Management Project	Team leader must be specialized in Network Infrastructure and Data Project Management which is focusing Network Design, Optimization and Solutions in terms of reliability and security.	- Advance in System Integration Project Management
1 Network Engineer	At least 3 years in advanced networking and SDN-networking, including large-scale (over 300 APs per site) WLAN deployment and next-	• Instructor must specialize in the below domain o SDN Campus Networking & iMaster NCE Campus o BGP EVPN & VXLAN & Virtualized Networking for Multi-Tenancy o Enterprise Campus Design • Instructor must hold the	• Advanced VLAN Technologies • Ethernet Switching Security • Advanced OSPF Routing • Advanced BGP Routing • EVPN Fundamentals and Configuration • VXLAN and Campus Network Virtualization • Network Admission Control • Large- and Medium-Sized Virtualized Campus Network

	generation firewall	below certification or equivalent to qualified: o HCIE/CCIE for datacom track o HCIP/CCNP for datacom track o NSE4/NSE7 Instructor must experience in teaching at local training institution or university for at least 5 years	Design/Deployment • Campus Insight Intelligent O&M • Data Center Network Architecture and Key Technology Application Campus Wireless Network Planning and Design

1 Server & Storage Engineer	At least 3 years' experience with VMware technology and Huawei Oceans Storage	• Instructor must specialize in the below domain
		o VMware-based deployment/design
		o Huawei Storage Technology deployment/design
		• Instructor must hold the below certification or equivalent to qualified:
		o HCIP Storage and HCSP Storage
		• Instructor must experience in teaching at local training institution or university for at least 5 years
			• Center Server
			• ESXi Hypervisor
			• vMotion
			• Distributed Resource Scheduler (DRS)
			• High Availability (HA)
			• Fault Tolerance (FT)
			• Storage vMotion
			• Storage Active-Active Architecture
			• Data Protection and Security
			  o **HyperReplication**: Provides synchronous and asynchronous replication to safeguard data across different locations.
			  o **HyperMetro**: Enables active-active data centers with zero RTO and RPO.
			  o **Data Encryption**: Protects data at rest and in transit with robust encryption technologies.
			
			Intelligent Management and Automation
			  o **eService**: Cloud-based management platform that offers predictive maintenance, real-time monitoring, and intelligent analysis.
			  o **SmartTier**: Automatically moves data between different tiers of storage based on usage patterns to

			optimize performance and cost. ○ **SmartMotion**: Provides intelligent load balancing and migration to ensure optimal resource utilization. **Efficiency and Cost-Effectiveness** • Deduplication and Compression: Reduces storage costs by eliminating redundant data and compressing data to save space. • Thin Provisioning: Maximizes storage utilization by allocating storage on-demand, rather than pre-allocating space.
1 Data Center Facility Expert	At least 3 years' experience with Huawei DC Facility Solutions	• Instructor must specialize in the below domain ○ Huawei Data Facility Solution • Instructor must hold the below certification or equivalent to qualified: ○ HCIA DC Facilities Optional: Instructor's experience in teaching at local training institution or university for related course is a plus	• Introduction to Modular Data Center Solution FusionModule2000 and 5000 • Introduction to Smart Mini and Small Data Center Solution FusionModule500 and 800 • FusionModule2000 Installation • Introduction to Huawei Air Cooled Precision Air Conditioners • NetCol5000-A042 Installation and Commissioning • ECC800 Installation and Commissioning 24 Huawei DCIM Management Tool

VII. Submission Requirements

Interested firms or consultants are requested to submit the following:

- A technical proposal outlining the approach and methodology to be used for this assignment.
- A financial proposal detailing the costs associated with the assignment.

VIII. WORKING SPACE
Mainly based at Royal University of Phnom Penh, Russian Federation Blvd, Sangkat Toek Laark 1, Khan Tuol Kork, Phnom Penh, Cambodia

IX. DURATION OF TRAINING SERVICES
The duration of the training services is **three (03) months** starting from the contract signing. The contract duration cannot be extended.

X. SCHEDULE AND EXPECTED OUTPUTS
Including mobilization of experts, the training services is expected to start **within 2 weeks after contract signing.** Detailed expected outputs are listed in the table below:

Expected Output	Person days	Time Schedule
Detailed training plan curriculum	Up to 1 day or 8 hours	The first week of contract
Training materials (manuals, guides, resources...)	Up to 2 days or 16 hours	By 2nd week of contract
Training IT Staffs for 10 persons	Up to 50 days or 200 hours	By 3rd week of contract
Training reports and evaluation results & Capacity building plan – future perspective	Up to 2 days or 16 hours	By 12th week of contract

XI. REPORTING REQUIREMENTS FOR THE TRAINING SERVICES

The Firm will report to the project manager through the PMT and work closely with the IT Coordinator Program. The reports must be copied to the Project Procurement Officer who takes charge of contract management. All copies of training reports and documents (soft and hard copies) are the property of SWEDEN-RUPP and the Firm is not eligible to share this property without the consent of the project manager. The Firm shall observe all intellectual rights of the SWEDEN-RUPP.

XII. PAYMENTS FOR THE TRAINING SERVICES

This is a lump-sum assignment and the Firm will be paid based on the completion of training and approved by the SWEDEN-RUPP management team as per the payment schedule below:

Payment Schedule			
Steps of Payment	Amount	Scheduled Date	Payment Conditions
Payment No 1	70% of the value of contract amount	Refer to contract signed.	Completed training base on training schedule
Payment No 2	30% of the value of contract amount	Refer to contract signed.	Upon received training reports and evaluation results & Capacity building plan – future perspective